

Remarks

This REPLY is in response to the Office Action mailed September 24, 2007. A Petition for Extension of Time is submitted herewith, together with the appropriate fee. The fee for addition of new claims is also enclosed herewith.

I. Summary of Examiner's Rejections

Prior to the Office Action mailed September 24, 2007, Claims 1-33 were pending in the Application. In the Office Action, Claims 1-33 were rejected under 35 U.S.C. 103(a) as being unpatentable over Traversat et al. (U.S. Publication No. 2002/0152299, hereafter Traversat) in view of Bern et al. (U.S. Patent No. 6,898,422, hereafter Bern).

II. Summary of Applicant's Amendment

The present Reply amends Claims 1-2, 4, 6-9, 12-13, 15, 17-20, 23-24, 26 and 28-31; and adds new Claim 34, leaving for the Examiner's present consideration Claims 1-34. Reconsideration of the Application, as amended, is respectfully requested.

III. Claim Rejections under 35 U.S.C. §103(a)

In the Office Action mailed September 24, 2007, Claims 1-33 were rejected under 35 U.S.C. 103(a) as being unpatentable over Traversat (U.S. Publication No. 2002/0152299) in view of Bern (U.S. Patent No. 6,898,422).

Claim 1

Claim 1 has been amended by the current Reply to more clearly define the embodiment therein. As amended, Claim 1 defines:

1. *(Currently Amended) A system for message ordering in a message oriented network, independently of any conversation processing, comprising:
a sender or a plurality of senders, that sends messages as a plurality of groups of messages, wherein each message within a particular group are to be processed in a particular order;*

*a plurality of receivers, that receive the messages; and,
wherein, for each group of messages that are to be processed in the particular order, each of said senders associate the messages in that group with both a sequence group identifier for that group, and a sequence number for that message, and
wherein each of the receivers
identifies messages having common sequence group identifiers, and then
cooperates with other receivers to process those messages in the particular order, including confirming, prior to processing a message received in a group and having a particular sequence group identifier and sequence number combination, that a previous receiver has already one of received or processed a message having the same sequence group identifier and the preceding sequence number.*

Claim 1, as presently amended, defines a system for message ordering wherein each message within a particular group are to be processed in a particular order. Each sender associates the messages in that group with both a sequence group identifier for that group, and a sequence number for that message. Each receiver identifies messages having common sequence group identifiers, and then cooperates with other receivers to process those messages in the particular order, including confirming, prior to processing a message that a previous receiver has already one of received or processed a message having the same sequence group identifier and the preceding sequence number.

By way of example, Figure 6 shows a system 200 that uses sequence group identifiers in accordance with an embodiment. The system includes two Web Services 208 and 210, in this example the BOND and STOCK Web Services, which accept orders 204, 206 to buy bonds and stocks respectively. A customer or client C 202 wants to issue an order for both bonds and stocks, but wants the orders to be executed in a particular sequence. What C ideally wants to do is send out all of its orders at once and just specify the order in which they are to be executed. But since the order involves purchasing both bonds and stocks it needs to have a sequence that reaches across both the BOND and STOCK Web Services. With a traditional model, one would be required to introduce a new Web Service, e.g. BONDSTOCK, that could handle both types of orders. However, using the embodiment of Claim 1, each of said senders associate the messages in that group with both a sequence group identifier for that group, and a sequence number for that

message, so that requests ST1+XYZ+0 and ST2+XYZ+1 can be sent to STOCK, and request BO1+XYZ+2 sent to Bond. Each of the receivers then cooperates with other receivers to process those messages in the particular order, including confirming that a previous receiver has already one of received or processed a message having the same sequence group identifier and the preceding sequence number, for example allowing BOND to send a request to STOCK asking "Have you processed message XYZ+1?". This ensures the requests are processed in the appropriate order.

Additional advantages of the embodiment defined by Claim 1 include that it does not requires a central coordinator. Since all that matters is the question of whether the previous message has been processed, in some embodiments it is easier to let each receiver directly communicate with the receiver that had the previous message. The ability to operate without a central source to overload makes the process very scalable.

Traversat discloses a system and method for establishing reliable connections between peers in a peer-to-peer networking environment. (Abstract). In one embodiment, the peer-to-peer platform may use a universal unique identifier (UUID), for example, a 64- or 128-bit datum, to refer to an entity (e.g. a peer, peer group, pipe, content, etc.). For example, UUIDs may be embedded in advertisements for internal use. UUIDs preferably may be used to guarantee that each entity has a unique UUID within a local runtime environment and serves as a canonical way of referring to an entity, but because a global state is not assumed, it may not be possible to provide a guarantee of uniqueness across an entire community that may consist of millions of peers. (Paragraph [0080]). In one embodiment, each message may include a sequence number configured for use in maintaining ordering of received messages on a receiving peer. The destination peer may check the sequence number of each received message and store the first M messages in the sequence of N transmitted messages in a receive window. Other received messages in the sequence of N transmitted messages may be buffered by the destination peer, or alternatively may be discarded (as the discarded messages may be retransmitted in the next transmit window). (Paragraph [0065]). When an unreliable networking transport is used, each message may be delivered more than once to the same destination or may not arrive at the destination. Two or more messages may arrive in a different order than sent. In one embodiment, high-level communication services layered upon the core protocols may perform message re-ordering, duplicate message removal,

and processing acknowledgement messages that indicate some previously sent message actually arrived at a peer. (Paragraph [0165]).

Bern discloses a mail server site and a method in a mail server site to provide mobile e-mail services to mobile stations connected to a digital radio communication network. The mail server site includes a mail server host operating in accordance with POP3- or IMAP4-like protocols with respect to the usage of unique identifiers (UIDs) for identifying e-mail messages stored by the mail server host. (Abstract). One object of the [] invention is to provide a mail client with the ability to, over a digital radio communications network, access a specific e-mail stored by a corresponding POP3- or IMAP4-like mail server host without first having to download all UIDs or all message sequence numbers of all the e-mails stored in the mail box of the mail client, or having to issue one or more commands to the mail server host for retrieving a UID corresponding to the specific e-mail. (Column 3, Lines 30 -39). The [] invention is based on the insight that if a UID (Unique Identifier) of an e-mail used by a POP3, IMAP4 or similar mail server host could be known beforehand, an e-mail stored at the POP3/IMAP4 mail server could be accessed without the overhead of having to ask the server to list all UIDs assigned to the e-mail messages of a particular mail box or having to issue a sequence of commands for retrieving a UID of a particular e-mail. (Column 3, Lines 43-50).

Applicant respectfully submits that, as described above, it appears that the sequence numbers in Traversat, and the UID's in Bern, are used to provide a means of sequencing messages that is different from the embodiment defined by Claim 1. In particular, Traversat appears to describe various features such as receive windows, that can be used in a peer-to-peer networking environment, to ensure that a sequence of messages between peers is maintained, and so that one peer receives messages from the other peer in the correct order. Bern appears to describe UID's that are unique for a particular mail box of a specific user, which allows the user to efficiently retrieve one or more specific e-mail messages from within a larger sequence of e-mail messages that are stored at a host.

However, Applicant respectfully submits that neither the sequence numbers in Traversat, nor the UID's in Bern appear to be the same or similar to the sequence numbers or the sequence group identifiers presently defined by Claim 1. In particular, neither Traversat nor Bern appear to disclose or render obvious the ability of a sender to associate messages in a group with both a

sequence group identifier for that group, and a sequence number for each message, and to then send messages to a plurality of receivers, wherein each of the receivers identifies messages having common sequence group identifiers, and then cooperates with other receivers to process those messages in the particular order. Nor does Traversat or Bern appear to disclose or render obvious each receiver confirming, prior to processing a message that a previous receiver has already one of received or processed a message having the same sequence group identifier and the preceding sequence number. Claim 1 has been amended to more clearly define these features.

In view of the comments provided above, Applicant respectfully submits that the embodiment defined by Claim 1 is neither anticipated by, nor obvious in view of the cited references, and reconsideration thereof is respectfully requested.

Claims 12 and 23

The comments provided above with respect to Claim 1 are hereby incorporated by reference. Claims 12 and 23 have been similarly amended by the current Reply to more clearly define the embodiments therein. For similar reasons as provided above with respect to Claim 1, Applicant respectfully submits that Claims 12 and 23, as amended, are likewise neither anticipated by, nor obvious in view of the cited references, and reconsideration thereof is respectfully requested.

Claims 2-11, 13-22 and 24-33

Claim 2-11, 13-22 and 24-33 have also been amended by the current Reply to more clearly define the embodiments therein. Additionally, these claims depend from and include all of the features of at least one of Claims 1, 12 or 23. Claims 2-11, 13-22 and 24-33 are not addressed separately but it is respectfully submitted that these claims are allowable as depending from an allowable independent claim, and further in view of the amendments to the claims and the comments provided above. Reconsideration thereof is respectfully requested.

IV. Additional Amendments

Claim 34 has been newly added by the present Reply. Applicant respectfully requests that new Claim 34 be included in the Application, and considered therewith.

V. Conclusion

In view of the above amendments and remarks, it is respectfully submitted that all of the claims now pending in the subject patent application should be allowable, and reconsideration thereof is respectfully requested. The Examiner is respectfully requested to telephone the undersigned if he can assist in any way in expediting issuance of a patent.

Enclosed is a PETITION FOR EXTENSION OF TIME UNDER 37 C.F.R. §1.136 for extending the time to respond up to and including February 25, 2008.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 06-1325 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

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